

REMARKS

The Office Action dated September 7, 2006, has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 1, 3-12 and 14-22 are pending and respectfully submitted for consideration.

Interview

The Applicants wish to thank the Examiner for the telephonic interview granted on December 5, 2006. In the interview, claim 1 and the cited references were discussed. As a result of the interview, the Examiner indicated that further consideration would be given to the claims in view of the cited references and the remarks presented herein.

Rejections Under 35 U.S.C. § 103

Claims 1, 3, 6, 8, 9, 11, 12, 14, 17, 19, 20 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Iizuka (U.S. Patent No. 4,188,933) in view of Jindo et al. (U.S. Patent No. 6,665,603 B2, "Jindo"). Iizuka was cited for disclosing many of the claimed elements of the invention with the exception of the deceleration determination as being associated with a speed and/or distance control device which determines a deceleration condition associated with a comparison of velocity of the vehicle and another value under a preceding vehicle following operation. Jindo was cited for curing this deficiency.

Claims 1, 3, 4, 5, 7-9, 11, 12, 14-16, 18-20 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Iizuka in view of Guest (U.S. Patent No. 6,193,333 B1). Iizuka was cited for disclosing many of the claimed elements of the invention with the exception of the deceleration determination as being associated with a speed and/or

distance control device which determines a deceleration condition associated with a comparison of velocity and/or change in velocity of the vehicle with target velocity and change of velocity values, and a road gradient. Guest was cited for curing this deficiency.

Claims 10 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Iizuka in view of Jindo and Isogai et al. (U.S. Patent No. 6,594,574 B2, "Isogai"). Iizuka and Jindo were cited for disclosing many of the claimed elements of the invention with the exception of the deceleration determination as being associated with a fuel-cut control device which determines a deceleration condition. Isogai was cited for curing this deficiency.

Claims 10 and 21 were separately rejected under 35 U.S.C. § 103(a) as being unpatentable over Iizuka in view of Guest and Isogai et al. Iizuka and Guest were cited for disclosing many of the claimed elements of the invention with the exception of the deceleration determination as being associated with a fuel-cut control device which determines a deceleration condition. Isogai was cited for curing this deficiency.

To the extent that the above-noted rejections remain applicable to the claims currently pending, the Applicants traverse the rejections and respectfully submit that claims 1, 3-12 and 14-22 recite subject matter that is neither disclosed nor suggested by the cited references.

Iizuka discloses an apparatus for controlling the operation of inlet and exhaust valves and the supply of fuel to selected cylinders of a multi-cylinder internal combustion engine. The inlet and exhaust valves for induction and exhaust of the selected cylinders are closed and the supply of fuel to them is cut off to operate the

engine on the remaining cylinders. A detector to detect a predetermined control event in which the engine is to be decelerated is provided. Also provided is a valve operation restoring device for causing restoration of the disabled valves when the detector detects the predetermined control event to let the disabled cylinders pump air to achieve effective engine braking. See the Abstract of Iizuka.

Jindo discloses a vehicle traveling control system installed to a host vehicle 1 and comprises a following controller 4 for executing a following control relative to a preceding vehicle or object and a lane-keeping controller 5 for executing a lane-keeping control including a steering control of the host vehicle 1. See column 2, lines 19-25 of Jindo.

Guest discloses a vehicle brake control wherein when an activation switch 32 is switched on by the driver to select hill descent mode, the electronic control unit takes active control of the vehicle's speed, controls the application thereof and releases the brakes to limit the vehicle's speed. The electronic control unit 22 has stored in memory a fixed minimum target speed associated with each gear of the vehicle transmission, the speeds increasing for higher gears from about 7 kph for the first gear up to about 14 kph for the fifth gear. The control unit is also arranged to operate the brakes to control the acceleration and deceleration rate of the vehicle to keep it to safe limits, both when the system is first activated, and when it is changing the speed of the vehicle as a result of a change of gear by the driver. See column 2, line 60 to column 3, line 13 of Guest.

Isogai discloses an inter-vehicle distance control apparatus and recording medium for the same. Fig. 9 of Isogai discloses that if a fuel cut is being requested, the inter-vehicle distance control unit ECU 2 judges whether the braking is being requested.

If the braking is not being requested, the inter-vehicle distance control unit ECU 2 judges whether the acceleration deviation is lower than a reference value in step S945.

If the acceleration deviation is less than a reference value, the inter-vehicle distance control unit ECU 2 judges that the braking request is established in step S947 and returns the process to the deceleration request judging subroutine S900. See column 9, lines 51-64 of Isogai.

As noted above, claims 1 and 12 recite "switching control of engine operation based on a load of the engine between a full-cylinder operation in which all of the cylinders are operative and a cut-off cylinder operation in which some of the cylinders are inoperative" and that the engine operation controller or the step of engine operation control "switches engine operation to the full-cylinder operation if it is determined that deceleration is required by the step of running control when the running controller conducts at least one of the cruise control and the preceding vehicle follow-up control". As such, the engine is operating under the cut-off cylinder operation when the running controller conducts at least one of the cruise control and the preceding vehicle follow-up control.

As acknowledged in the Office Action, Iizuka fails to disclose determining that deceleration is required by the running controller or by the step of running control when the running controller conducts at least one of the cruise control and the preceding vehicle follow-up control. Jindo and Guest fail to cure the deficiencies in Iizuka as neither Jindo nor Guest disclose or suggest a cut-off cylinder operation wherein the running controller conducts at least one of the cruise control and the preceding vehicle follow-up control. Jindo and Guest merely disclose deceleration demands in the cruise

control or preceding vehicle follow-up control. However, there is no disclosure or suggestion of a cut-off (or partial) cylinder operation during the execution of the following control in Jindo, or during the time that the electronic control unit takes active control of the vehicle's speed in Guest. As such, none of the cited references disclose or suggest the condition of the engine during cruise control and preceding follow-up control. Accordingly, the references as combined do not teach or suggest that the cylinders are in a cut-off operation during the cruise control and preceding vehicle follow-up control, as recited in claims 1 and 12.

The Applicants note the statement on page 6, the paragraph beginning on line 26 of the Office Action in which it is stated that it is very well known in the vehicle arts to connect added systems (such as cruise or preceding-vehicle-following controls) such that an element having a need for causing a braking condition interfaces with a braking system present in an existing vehicle. As such, the incorporation of cruise or following controls which would require a braking force be delivered under certain conditions with an existing braking arrangement in a vehicle, such as that taught by Iizuka, would not be deemed to be beyond the skill of the ordinary practitioner. The Applicants also note the Office Action position that Iizuka can retrieve braking desirability information from "sources" other than merely the depression of the brake pedal.

The Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify Iizuka with the cruise control or preceding vehicle follow-up control in a cut-off cylinder operation, as recited in the claims of the present application.

The Applicants submit that Iizuka merely discloses that to effect braking, the inlet and exhaust valves associated with the deactivated cylinders will be restored and that a detector or switch 4 that detects a condition where the engine braking is demanded, such as an operating condition of a foot brake pedal. The Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art to combine the following controller 4 of Jindo and control unit 22 of Guest to effect braking as Iizuka does not disclose or suggest any more than the operating condition of the foot brake pedal for deceleration. See column 2, lines 19-28 of Iizuka.

In addition, the Applicants respectfully submit that the Office Action selection of "sources" is based on the present application. It appears to the Applicants that the Office Action selected the "sources" to be the cruise control and following controller 4 of Jindo and control unit 22 of Guest. The Applicants further submit that the Office Action motivation for combining Iizuka, Jindo and Guest, was derived from the specification of the present application because none of the references disclose or suggest cruise control and vehicle follow up control during a cut-off cylinder operation. Jindo and Guest merely disclose the relationship between the following control and the brakes of the vehicle, with no mention of the condition of the engine or engine cylinders during the following control. Accordingly, the Applicants respectfully submit that the suggestion to modify Iizuka to have a following control and to have the following control operative when selected cylinders are cut-off was found in the Applicant's disclosure which based on impermissible hindsight.

In view of the above, Applicants respectfully submit that Iizuka, Jindo and Guest, alone or in any combination thereof, fail to teach or suggest each and every feature

recited in claims 1 and 12 because each reference fails to teach or suggest a system in which the engine operation controller switches engine operation to the full-cylinder operation if it is determined that deceleration is required by the running controller when the running controller conducts at least one of the cruise control and the preceding vehicle follow-up control.

To establish *prime facie* obviousness, each feature of a rejected claim must be taught or suggested by the applied art of record. See M.P.E.P. §2143.03. As explained above, Iizuka, Jindo and Guest, alone or in any combination, fail to teach or suggest each and every feature recited by claims 1 and 12. Therefore, Applicants respectfully submit Iizuka, Jindo and Guest fail to render the invention recited in claims 1 and 12 obvious. Accordingly, Applicants respectfully submit claims 1 and 12 should be deemed allowable.

Claim 10 depends from claim 1 and claim 21 depends from claim 12. The Applicants respectfully submit that the combination of Iizuka, Jindo and Isogai and the combination of Iizuka, Guest and Isogai fail to disclose or suggest the features of the invention as recited in claims 1 and 12, and therefore, dependent claims 10 and 21. Specifically, Isogai fails to cure the deficiencies in the combination of Iizuka and Jindo and Iizuka and Guest with respect to claims 1 and 12, as Isogai also does not disclose or suggest that the cylinders are in a cut-off operation during the cruise control and preceding vehicle follow-up control.

In view of the above, the Applicants respectfully submit that the cited references do not support, and the Office Action has failed to establish, a *prima facie* case of obviousness for purposes of a rejection of claims 1 and 12 under 35 U.S.C. §103.

Conclusion

Claims 3-11 depend from claim 1 and claims 14-22 depend from claim 12. The Applicants respectfully submit that each of these claims incorporate the patentable aspects thereof, and are therefore allowable for at least the same reasons as discussed above. Accordingly, the Applicants respectfully request withdrawal of the rejections, allowance of claims 1, 3-12 and 14-22, and the prompt issuance of a Notice of Allowability.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, referencing Attorney Dkt. No. 107101-00052.

Respectfully submitted,



Rhonda L. Barton
Attorney for Applicants
Registration No. 47,271

Customer No. 004372

AREN'T FOX PLLC
1050 Connecticut Avenue, N.W., Suite 400
Washington, D.C. 20036-5339
Tel: (202) 857-6000
Fax: (202) 638-4810
RLB/elz